



Maryville College Bulletin

Vol. LXVII

Maryville, Tenn. 37801 — November, 1968

Number 4

Dedicate 1.3 Million Dollar Sutton Science Center



MR. AND MRS. ALGIE SUTTON are in front of the main entrance to the new Sutton Science Center. Mrs. Sutton is preparing to cut the ribbon officially opening the building. Dr. Joseph J. Copeland, President of Maryville College, obligingly assists.



DR. JOSEPH J. COPELAND, PRESIDENT, left; and Bill A. Fleming, Director of Development, right; display a plaque and portrait of Algie Sutton to be placed in the main lobby of the new Sutton Science Center. The portrait was presented to the college by his graduating class of 1929.

Major Event During Homecoming Weekend

One of the major events in the history of Maryville College took place recently when the new \$1.3 million dollar Sutton Science Center was formally dedicated at 11:30 a.m. on Saturday, October 26, 1968, as part of the Homecoming Weekend Festivities. The building had been opened for student use at the beginning of the 1968 Fall Term in September.

In the summer of 1964, during the Development Fund Campaign, Algie Sutton, of Greenville, S. C., a MC graduate of 1929, pledged \$500,000 on a matching basis with all of the Alumni of the college. The Alumni responded and with their combined pledges, along with grants from the ALCOA Foundation, the Kresge Foundation and the Federal Government, the College was able to proceed with professional counseling and the design of a new science building.

Its construction had been looked forward to since June, 1959, when the then College President, Dr. Ralph W. Lloyd, MC Class of 1915, announced that new science facilities were the next priority in the College's building program.

And now, on Saturday, October 26, 1968, a little over nine years later, MC President Dr. Joseph J. Copeland, presided over the ceremonies, that culminated this project. The Sutton Center is located across the circle drive from the Fine Arts Center and next to Pearsons Hall and the Lamar Memorial Infirmary.

The dedication address was given by Dr. George C. Kent, Jr., Professor of Zoology, Louisiana State University, and an alumnus of MC, Class of 1937. Dr.

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Parents, Alumni Visit New Center Classrooms

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Kent was a recipient of a MC Alumni Citation in 1962. His dedicatory speech is printed in its entirety on the next two pages.

The Invocation was given by Dr. James N. Proffitt, MC Class of 1938, and a member of the College Board of Directors.

Bruce P. Semple, MC Class of 1969 and President of the Student Body; Dr. A. Randolph Shields, MC Class of 1934, Chairman of the Biology Department; and the Rev. Robert A. Larson, MC Class of 1951, President of the Alumni Association, brought official greetings from the students, faculty and alumni.

Ben F. McMurry, Jr., of Barber and McMurry, Architects and Charles M. Emory, Jr., of Emory and Richards Contractors, presented the building to the College. Acceptance for the College was by Dr. Boyd L. Daniels, Dean of the College and Dr. David P. Young, Chairman of the Chemistry Department, representing the Science Faculty. Dr. Joe C. Gamble, MC Class of 1926, Chairman of the College Board of Directors, dedicated the building.

A special presentation of a portrait of Algie Sutton and a plaque was presented by Mr. Sutton's classmates of 1929. Mrs. Algie Sutton, assisted by Mr. Sutton and Dr. Copeland, cut the ribbon, signifying the official opening of the building.

Mr. Sutton worked his way through Maryville College during the "Great Depression" earning 15c per hour. After graduating in 1929, he taught school for four years before entering the insurance field. Mr. Sutton retired from the Combined Insurance Company of America after twenty-three years of service.

During the Phase I of the Sesquicentennial Development Campaign in 1964, he gave \$500,000 toward the construction of the science center. Mr. Sutton is a member of the College Board of directors, and also General Chairman of Phase II of the Sesquicentennial Development Campaign in 1968, during which he gave an additional \$250,000.

Mr. Sutton served as a deacon and elder in Chadbourne (N.C.) Presbyterian Church. He is a member of the Masonic Lodge and is on the Board of Trustees of Miracle Hill School, Greenville, S. C.

He and his wife, Elizabeth, have three daughters and three grandchildren. All three daughters and their children were present for the dedication along with several brothers and members of their families and their guests.



DR. A. RANDOLPH SHIELDS, (second from left) describes the lecture room of the Sutton Science Center, Room 113 includes a 51-seat amphitheatre type arrangement whereby any member in the room can command a clear view of the demonstration table in the center and also each other.



ALUMNI, PARENTS, FRIENDS, STUDENTS view one of the two double room biology laboratories. This and other rooms feature the pyrex drain pipes (shown near the ceiling) installed because pyrex is impervious to chemical erosion. These pipes may be dismantled and cleaned.



DR. A. RANDOLPH SHIELDS, (with back to camera) explains the use of the new-type lecture-laboratory room, where students can set up their experiments, leave them there, and have plenty of room for discussing the projects around another table, to Alumni, Parents, Students and Friends.

Dr. Kent, '37 Alumnus, Dedicates New Center

President Copeland, Mr. and Mrs. Sutton, Honored Guests, Ladies and Gentlemen:

I have a confession to make. I have never before participated in the dedication of an academic building. If there is any question in your mind about this as I commence, I think my status as a novice will have become evident before I am through.

However—and I say this very earnestly—no similar event could occasion within me such personal pride because, in dedicating this beautiful facility, my alma mater takes a giant step forward.

I was among the many fortunate young people who received their initial science training in old Fayerweather Hall. I served as a janitor on the second floor of Fayerweather for one year; and I also spent much of my spare time there, reading the books that belonged to my respected professor, Dr. Susan Green (Black). So I have fond memories of Fayerweather. It seems quite natural, therefore, that when I was extended the privilege of participating in these exercises my thoughts reverted to this older science hall. I began to wonder about the state of our knowledge of the natural sciences at the time Fayerweather was new compared with the state of our knowledge today. I would like to share with you a very few of these contrasts.

There is a short prologue and there are a few concluding remarks. Considerable experience with audiences has taught me it is easier for an audience to achieve empathy with a speaker if they know approximately where he is, mileagewise. For this reason I want you to know that my remarks, like all of Gaul, are divisible into three parts. And now to Part 1, the prologue:

A minute ago I said I would contrast "the state of our knowledge" of nature on these two occasions. This was an inept selection of words. I should have said I would contrast our insight into natural phenomena at the time Fayerweather was built, with our insight today. The word knowledge signifies, according to Webster, "a clear perception of fact or truth." I think it is safe to say that we have only a reasoned guess of what is fact in many areas of science, and an even less reliable conception of truth. The knowledge of one generation becomes the fiction of a later generation, and no one can say what is really known.

Man recognizes several degrees of knowledge. One degree is what he calls "immediate knowledge." This is know-



Dr. George C. Kent, Jr.

ledge he takes pride in calling "fact." It is knowledge acquired by the senses. The words, "immediate knowledge," constitute a signal denoting that he has experienced some specific sensory input from the environment. He has seen, heard, felt of, tasted, or otherwise detected through his sense organs something that bears some association to something else he previously saw, heard, felt of, and so forth. Using the words, "immediate knowledge" in this context, I think we probably do not have today a great deal more immediate knowledge of prime significance concerning nature than we had when Fayerweather was built. I think it is safe to say that advances represent primarily refinements of the immediate knowledge we previously had. These refinements can be attributed to the development of sophisticated instruments that magnify our senses.

A second category of knowledge has been erected to symbolize concepts arrived at through the intellectual processes of abstraction and comparison. To these concepts man has applied the term, "abstractive knowledge." Abstractive knowledge comes from putting two and two together in the mind (and in the mind only), and getting four; or, it comes from exposing a sensitive photographic plate to an exploding atom and observing that an electrical charge has left a trace on the plate. We certainly have a great deal more abstractive knowledge today than we had in 1900. And so we have achieved much greater insight into the apparent nature of things from electrons to nebulae. I stress the words **apparent nature** of things because I, for one, have

been fooled on occasion. Pragmatists will say I am too conservative since I refuse to accept overwhelming evidence as proof. I can only reply, "It takes all kinds of people to make the world."

With reference to our knowledge of natural phenomena today compared with the year 1900 I would summarize it this way: More of the population is a lot less superstitious than they were in 1900! With respect to abstractive knowledge the voice of history is loud and clear: Things we were sure of a few years ago are, today, explained in quite different terms. Some of the things we thought we knew are considered false now. Succeeding generations, at least in the western world, and since the renaissance, have consistently categorized themselves as "sophisticated," and have labeled earlier generations "naive." The generations to follow will be no different.

Rather than talk about knowledge, therefore, I prefer to talk about insight. Webster defines insight as "discernment and understanding". Discernment and understanding change as our experiences change. I think of insight as referring to our estimate, and only an estimate, of the nature of something, the estimate being based on all presently available data. I think we have gained much insight into the nature of the material universe since Fayerweather was constructed.

I dare not venture any deeper into the connotations of the words knowledge, fact, truth, and insight. Discussion of these must be left to authorities in semantics. I did feel it necessary to make an unusual affirmation for a scientist: that is, an affirmation of lack of faith in both immediate knowledge and, more especially, in abstractive knowledge. And with this affirmation I complete Part 1.

Now, I would like to take a brief look at the insight we had into the nature of the universe at the turn of the century. At that time it was accepted as fact that the entire universe is filled with an incompressible elastic body called ether. The President of the Mechanical and Physical Section of the British Association of Sciences said, at an annual meeting at that time, "People who think a little, but not too much, sometimes ask me, 'Why do you believe in the ether?'" I ask them, "What becomes of light for the eight minutes after it has left the sun, and before it reaches the earth?" When they consider that, they observe

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"New Facility Is Giant Step For Alma Mater"

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how necessary the ether is!"

You will note the absolute faith this scientist had in his abstractive knowledge. If he could not conceive of any alternative to ether, then there must not be any!

As further evidence of the acceptance of ether as a fact, it was written in 1900, "Whatever difficulties we may have in forming a consistent idea of the ether, there can be no doubt that the interplanetary spaces are not empty but are occupied by a material substance which is certainly the largest, and probably the most uniform body of which we have any knowledge. Its discovery may be looked upon as the most important feat of our century."

Well, seven years after Fayerweather was occupied Einstein's Special Theory of Relativity destroyed the ether as a human concept. And that is the status of our insight at the present time. We now conclude that interstellar space is a vast ocean of nothing other than cosmic dust and radiation. Perhaps one generation or the other was correct; perhaps they both were correct. More likely, no generation has as yet reached a state of infallible knowledge of the nature of the interplanetary voids.

Now, I would like to turn our thoughts from planets to atoms. Until the time Fayerweather was first on the drawing boards, the atom was considered the smallest particle in which matter exists. Some of you may recall the old poem. I think it went like this....."An atom is a tiny thing, that you will never see. Its smaller than a bedbug and it's smaller than a flea.".... Just about the time the first classes were meeting in Fayerweather, it was discovered that bombarding an atom results in negatively charged particles being torn from it.

It was about at this time that the Department of Natural Sciences on the campus was split into three Academic Units: A Department of Chemistry under Albert Gileman, a Department of Biology under John Ritchie, and a Department of Mathematics and Physics under the Rev. Elmer B. Waller. I don't suppose there was any relationship between the splitting of the atom and the splitting of the Departments. It is my guess that the chemists felt they could make greater progress independently, and that the mathematicians and physicists were happy to be separated from the unmathematical biologists. It was not until twenty-five years later, however that Physics was separated from Mathematics. At that time (1925) the beloved

Daddy Knapp continued as head of Mathematics.

Despite the insight that had been achieved by observing the emission of electrons from atoms, the atom continued to be considered immutable. That is, it was taught that one element could not be converted into another, as the alchemists had for so long been trying to do. And Fayerweather was more than twenty years old before Dr. Rutherford (1919) first smashed the atom and converted one element into two entirely different elements. What he actually did, was to knock the H out of Nitrogen.

Now, before you accuse me of vulgarity, hear me out. Nitrogen (signified by symbol N) has an atomic weight of 14. That is, it has 7 protons and 7 electrons. Helium (He) has an atomic weight of 4 (2 protons, 2 electrons). Rutherford bombarded nitrogen with helium and got an unstable intermediate of 9 protons and 9 electrons. This unstable intermediate then split to form two entirely different atoms, an isotope of oxygen (with an atomic weight of 17), and a hydrogen nucleus (symbol is H), with an atomic weight of 1. Thus, Rutherford knocked the hydrogen out of nitrogen and produced oxygen. This was the first known instance in which man induced atomic fission.

At the time Fayerweather was occupied the two most important phenomena studied in natural sciences were matter and energy. Matter, it was held, having once been created can never be destroyed. Energy was envisioned as a property of matter. It was nearly ten years after Fayerweather was occupied that Einstein propounded his now famous equation, $E=Mc^2$. This is known as Einstein's General Theory of Relativity. $E=Mc^2$! Energy is equatable with mass! Energy can be converted into mass, thus creating matter. Matter can be dissociated into energy, thus destroying matter in material form!

This equation permits the interpretation of the creation of the natural universe from primordial energy, and from nothing else. Thus, the most heralded scientific insight of the 20th century, far from discrediting the concept of a Supreme Intelligence, brought us closer--perhaps as close as humanity shall ever get--to insight into the awesome spirit of that Intelligence. The old testament insight, "In the beginning was the word, and the word was with God, and the word was God"....this insight takes on new dimensions; yet it remains totally unimpeachable and as mysterious as ever.

Now I would like to look briefly at the status of the Life Sciences in 1900. Biology had just about completed the initial stages that all young sciences pass through, the collection and cataloguing of data. Taxonomy had named all known organisms in accordance with a plan devised by the Frenchman, Linné. And these organisms had been arranged in what still seems in its broad implications to be a fairly acceptable phylogenetic series. The major groups of plants and animals, from liverworts to electric eels and from bacteria to bats, had been pretty well described as to their detailed internal anatomy. Many organisms that cause infectious disease had been described. The histologists had catalogued and described the tissues and major constituents of the cell as far as these could be demonstrated by available staining techniques, and with visible light. And Roentgen, using the new fangled cathode ray tube, had proudly displayed a photo of the bones of a living human hand. And with these accomplishments anatomy had gone about as far as it could with available instruments, except for details. The viruses were unknown because they could not be seen.

Some rather valid information about the physiology of organisms had been achieved by 1900. It was clear that the cell was using oxygen for the release of the energy stored in foodstuffs, but the mechanism whereby the energy was released was not understood. This was partly a result of the failure of the physiologists to pay attention. An astute observation had been published in the PROCEEDINGS OF THE ROYAL SOCIETY OF LONDON way back in 1886. It was reported that a certain class of pigments had been found in the cells of all animals from starfish to man, that the pigments were the same in all animals, and these pigments appeared to be capable of oxidation and reduction. In other words, they might well be associated with the use of oxygen in the cell; and, as such, were well worth further study. Unfortunately, like the work of Gregor Mendel, this publication was forgotten. And it was not until forty years later that these pigments were rediscovered by biochemists and their function determined. It is now clear that these pigments, known as cytochromes, play the leading and final role of extracting the sun's energy from glucose, while splitting a fragment of the glucose molecule into carbon dioxide and water. The energy so extracted is packaged in a highly explosive little molecule with

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Science at Maryville College

MARYVILLE, TENNESSEE



SUTTON SCIENCE CENTER

The new \$1.3 million Sutton Science Center is occupied by the departments of biology, chemistry, physics, mathematics, and psychology. Opened in the fall of 1968, the two-story Center contains several special features including a 51-seat amphitheatre-type lecture room with every seat commanding a clear view of the demonstration area, a science library serving both teaching and research functions of the Center, and an audio-tutorial room which permits students to listen to taped lectures on various subjects which they

may have missed or want to hear again. The 50,000 square-foot, rectangular structure is fully air-conditioned. At the rear of the building is a \$42,000 hemispherical greenhouse.

The Center was designed to dovetail with the College's new curriculum which provides added time for individual study at the undergraduate level. The numerous well equipped laboratory areas provide an outstanding opportunity for independent study and research.

Majors in Biology, Chemistry, Mat

BIOLOGY

The modern facilities in the new Science Center affords the Department of Biology an opportunity to extend the whole horizon of teaching.

Students have their own individual study carrel in a large Biology Laboratory which gives easy access to experiments without interruptions. This promotes better independent study and undergraduate research.

Space and facilities are available for the installation of a source of gamma radiation for all fields of study in science, especially in biology on life activities. Space and facilities are also available for controlled environmental research.



Helen Barr, Kingsport, Tenn. senior, works on her Independent Study project in one of the individual study carrels in the Biology Department. The carrel is her own designated working area.

Dr. A. Randolph Shields
Professor and Chairman of the Department of Biology
B.A., Maryville College; M.S., 1939 and Ph.D., 1962, University of Tennessee; U.S. Navy Medical School, 1944-1945.

Robert C. Ramger
Assistant Professor of Biology
B.S., Maryville College; M.S., University of Tennessee, 1962; University of Minnesota, 1964-1965.

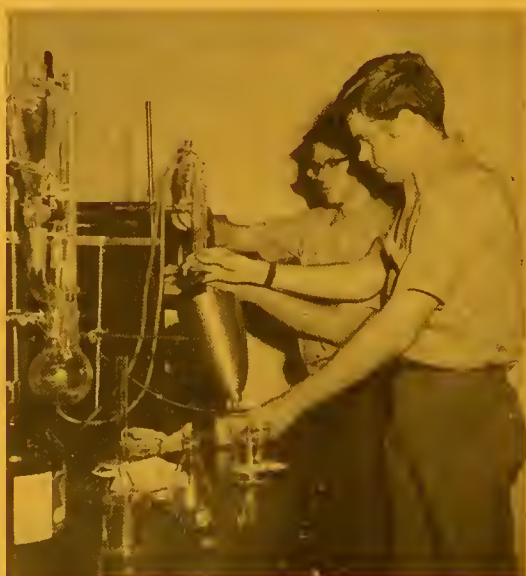
Frank O. Brunell
Instructor in Biology
B.A., Indiana University; M.S., University of Pennsylvania, 1966.

CHEMISTRY

One of the main features in the chemistry laboratory is the study-laboratory desk combinations for seniors. There is an individual station for each student at which he can study and experiment. This arrangement is ideally suited for independent study and research.

Modern, up-to-date ventilation facilities, which remove toxic and unwanted vapors from the area of experimentation, create a much safer environment in which to work.

Because of the additional space in the labs, all instruments are set up in operating condition in separate locations and can be left up for future use.



Two senior chemistry majors, Bill Cox (left) of Youngstown, Ohio, and George Brown (right) of Harriman, Tenn., purify a liquid by distilling it in a vacuum.

Dr. David P. Young
Associate Professor and Chairman of the Department of Chemistry
B.A., Park College, Ph.D., University of Kansas, 1963.

Dr. Paul J. Ogren
Assistant Professor of Chemistry
B.A., Earlham College; Ph.D., University of Wisconsin, 1968.

MATHE

Mathematics, the being in the new Science Center affords the Department of Mathematics an opportunity to extend the whole horizon of teaching.

The program is designed to provide an opportunity for students in science who plan to teach on the secondary school level.

Mathematics hopes to increase awareness of the role of mathematics in society, to enhance the student's appreciation and understanding of the abstract and logical nature of mathematics and structure in mathematics, and to provide the computational and logical skills required in related areas.



Robert C. Clark, Instructor in Mathematics, introduces his class to the course. The course includes set theory, trigonometry, and analytic geometry.

William H. Dent
Assistant Professor of Mathematics
B.A., Maryville College; M.S., University of Kentucky, 1963; University of Tennessee, 1967-1968.

Robert C. Clark
Instructor in Mathematics
B.S., Maryville College; M.S., University of Tennessee, 1966.

John W. Nichols
Instructor in Mathematics
B.S., Maryville College; M.S., University of Tennessee, 1967.

Mathematics, Physics and Psychology

MATHEMATICS

language of science, by the Center gives it a real place in the build-

ed to meet the needs of economics, and those of elementary or sec-

give the student an understanding of the form of mathematics in our student's ability in learning, to develop an understanding of the form of mathematics, and to provide operational skills re-learning.



for in Mathematics, Mathematical Analysis, algebra, functions, and an introduction

Mathematics
M.S., University of Tennessee,

M.A., University of

M.S., University of

PHYSICS

Physics is concerned with fundamental principles of all natural phenomena and is therefore basic to all natural sciences. The department provides services to other natural sciences as well as a major program in physics.

The isotope laboratory in the new Science Center is available for use by physics students as well as students of biology and chemistry.

It is the goal of the staff to make available to our students the best modern equipment to prepare them for graduate research. This equipment includes such items as scintillation spectrometer, an analog computer, and the latest in electrometers.

There is also available for use an electronics shop and a mechanical shop.



Junior students, Edward Hawkey (left) of Mt. Holly, N. J., and Wayne Blocker (right) of Dade City, Fla., check the scintillation gamma spectrometer.

Thomas I. Hicks
Assistant Professor and Acting Chairman of the Department of Mathematics and Physics
B.S., University of Chattanooga; M.S., Emory University, 1951; University of Tennessee, 1962-1963.

Dr. Norman D. Love
Assistant Professor of Mathematics and Physics
A.B., Albion College; M.A., Western Michigan University, 1962; Ph.D., Michigan State University, 1967.

PSYCHOLOGY

Laboratory facilities are now equipped to do research. There are individual rooms for independent study and faculty research. The experimental laboratory with 10 cubicles for class experiments allows the students to work in pairs.

There are special areas for students to set up their own experiments. The research testing room is provided with a one-way screen for viewing the subjects. The room is sound-proof.

The expanded animal quarters are shared by both Biology and Psychology Departments, and includes gerbils, mice, rats, and chickens.

There is an area for photographing live experiments using the different animals.



Sally Green, senior from Windsor Locks, Conn., speaks into the tape recorder that is wired to the physiograph which measures various physiological changes going on in the body. Dr. Waters (left), and Dr. Wahler (right), assist.

Dr. Jerry E. Waters
Associate Professor and Chairman of the Department of Psychology
B.A., Maryville College; M.A., 1960, and Ph.D., 1964, University of Kentucky.

Dr. Carole C. Wahler
Assistant Professor of Psychology
B.S., University of Washington; Ph.D., *ibid.*, 1968.

David A. Stingle
Instructor in Psychology
B.S., Washington State University, M.A., Kent State University, 1967.

COMPUTER PROGRAM

With the beginning of a computer program in the new Science Center, any science course may assign problems in which the student will need the assistance of the computer to solve.

The Psychology Department makes use of the computer in statistical testing. The Physics Department could solve very complicated nuclear problems.

A credited course is now being offered in Basic Computer Programming. Students are also given non-credit training on how to program the computer.



Questions and answers by teletype fed into a computer are watched closely by Scott Wood (seated), Lawrence, N.Y. senior; Dr. Norman D. Love, Director of Computer Programming; Hope Shields, Maryville senior; Ken Wood, Lawrence, N.Y. sophomore; and Gordon Tinley, Baltimore, Md. junior (standing left to right).

GREENHOUSE

The hemispherical greenhouse just behind the Sutton Science Center is the first of its kind. The 40-foot diameter building was designed to meet the suggestions of the science faculty. There is a headhouse in the center with five separate compartments extending from it. The five compartments each contain different humidity and temperature ranges to comply with different temperate zones throughout the country. Each compartment has a gravel floor for easier drainage. This also permits plants to be set right into the floor and not on shelves.



The design lends itself to research in the factors of climate, specifically temperature and humidity on the growth of plants. It permits us to create habitats for species of plants and small animals, which are not native to this part of the country.



"MC Youth Architects of Enlightened Tomorrow"

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the initials ATP.

Vitamins were unknown when Fayerweather opened and the word, hormone, was not coined until seven years later. It was known that a thyroid gland existed in all vertebrates from fish to man. And it was recognized that this gland contains hundreds of times more iodine than any other vertebrate tissue. But mostly, the biologist and the physician thought of the thyroid as a kind of blood purifier, a place where iodine—admittedly a poison under some conditions—could be promptly removed from the circulation. It was not until 1926 that it became apparent that the iodine in the gland was being linked with an amino acid to form the thyroid hormone—two thyroid hormones, in fact. As of this very date we do not know the precise site within the living cell where this hormone, or any other hormone, exerts its initial effect.

It is doubtful if even one horseless carriage brought anyone to the dedication ceremonies, because the first patent on a gas buggy was issued in 1890; and the first auto for the masses—the future tin lizzie—came in 1908. No airplanes droned overhead, because the Wright Brothers didn't fly (right over there beyond these mountains) until 1903.

Since Fayerweather was built the American people have fought two wars to preserve the right of everyone—of all races, all religions, all nationalities, all political beliefs—to have their turn on the speaker's platform, and to be accorded the freedom of speaking, and the courtesy of being heard. They fought two more wars, the second of which we are still engaged in, and which were deemed necessary—rightly or wrongly—as preventive measures for the preservation of American liberty.

These changes have altered the sociological face of the world. In addition, we have seen a depression, as Vannevar Bush wrote recently, "...such that the repetition of it would today shake the foundation of the Republic." This has contributed to altering the economic face of the world. And, we have seen our own country thrust into the role of a major political power with weapons capable of destroying all the nations of the world; yet, because of the fear of unleashing this awful power, we can no longer guarantee to protect our own citizens when they are outside of our borders. This has altered the political philosophy of a large segment of the world.

It is in this context that we approach the dedication of Sutton Science Center. And, it is in this context that those of us who are responsible scientist-educators must ask, "What is the role of the sciences and, therefore, of this beautiful new building, in the liberal arts college?" And that brings me to Part III, which I promise, will be brief.

It seems to me that an important role of a liberal arts college is to provide an atmosphere wherein youth may gain perspective. If the liberal arts college cannot provide this atmosphere, I know of no other educational institution, or complex of institutions, that can do so. One avenue to achieving perspective is to have the facts—as many facts as possible. Man has an unquenchable desire to know. This desire is a powerful force. It drives men to the oceans' depths and into interplanetary space. And so, within these halls will be imparted the insights achieved in the sciences—both the facts, and the deductions. And these will contribute to perspective. But are these enough? Is it sufficient to impart only the facts and deductions? What about the inferences? And, particularly, what about the inferences that might apply to human relationships?

Living matter is a unique state. There is nothing like it. It is organized into cells, tissues, organisms, species, and communities, all of which interact. One of the chief differences between living and nonliving matter is the extreme degree of organization of the living and the random dispersal, or disorder, of the nonliving. Living matter takes into itself the randomly dispersed matter of its environment and rearranges this matter into a high degree of orderliness. And so long as the organism lives, internal order is maintained. Only when life ceases does internal disorder appear, as the components of what was once a living system tend toward random dispersal. Our generalization? Life creates order from disorder. And randomness and disorder internal to the organism are absolutely incompatible with continued existence of life. The effect of orderliness in nature is to provide a matrix wherein gradual change can—and must—occur, without the destruction of the organism. Is there not an inference to be drawn from nature, by one of nature's own creations, human society?

Let's look for another inference. Living matter is unique in its capacity to actively remove energy from the environment. Energy is not just soaked up. It doesn't cross the cell membrane by osmosis. It is actively acquired through the

expenditure of energy. Of course, the initial energy of a living organism is a contribution of the previous generation, in the form of sperm, egg, seed, or spore. When living matter ceases to expend some of its intrinsic energy for the purpose of satisfying its total energy needs, death is inevitable. In other words, to continue to exist a cell, organism, species, or an ecological community of diverse organisms must put forth individual and collective effort. Is there not an inference to be drawn here that might be useful in human society?

One final question: The most basic phenomenon of the biological species is the struggle to survive. Individuals in what we call "social species" sacrifice themselves for the good of the species as a whole, as among the ants, for example. Instances of human sacrifice come readily to mind. But I know of no record of any species which actively participated in hastening its own demise. Is there not an inference to be drawn from the survival behavior of other species?

I would like to close by reciting a short Zen epigraph which speaks, in eloquently simple terms, about perspective, without mentioning the word:

To a man who knows nothing
Mountains are mountains
Water is water and
Trees are trees.
When he has studied and knows a little
Mountains are no longer mountains
Water is no longer water and
Trees are no longer trees.
When he has thoroughly understood
Mountains are again mountains
Water is water and
Trees are trees.

Armed with facts, nourished by insight, guided by perspective, and endowed with abiding faith, the youth who graduates from this hall will, with God's help, be among the architects of a more enlightened tomorrow.

MC Choir Concert Album Still Available

There is a limited supply still available of a two-record album prepared by the Maryville College Choir. The LP album is a recording of the Choir's concert at Carnegie Hall and Bernstein's Chichester Psalms, performed at Maryville. The album sells for \$9 each plus 60¢ for packaging and mailing. Your order may be addressed to Dr. Harry H. Harter, Box 2828, Maryville College, Maryville, Tennessee 37801.

Parents, Alumni, Students Enjoy Homecoming



MR. AND MRS. NORMAN S. VAUGHAN, '29 (Eliza J. Sherrill, '29) from Cleveland, Tenn., and an unidentified alumnus register for the big Homecoming Weekend October 25, 26, 27 in the College Theatre Colonnade prior to all the great events planned for the occasion.



ALUMNI, PARENTS, AND FRIENDS register in the College Theatre Colonnade on Homecoming Weekend. On hand to welcome the visitors were student guides and members of the Women's Student Government Association. The WSGA girls sold "Mums" and many of the ladies wore them to the Homecoming football game.



HOMECOMING QUEEN BRENDA LAIPPLY, Mansfield, Ohio, (center) is flanked by her court (from left to right) Sally Green, Windsor Locks, Conn.; Jean Hobson, Staunton, Va.; Mary Jane Schussler, Houston, Pa.; and Sue Carr, Medford, Mass. All are seniors selected by a campus-wide student election.

Dedication, Barbecue, Game Are Highlights

The Second Annual Parent's Weekend was incorporated into the traditional Homecoming Program as Parents, Alumni, Students, Faculty and Staff saw more major, numerous, surprising and satisfying events.

The biggest event was the dedication of the \$1.3 million Sutton Science Center by school officials, students, faculty, contractors, architects and the entire Algje Sutton family, for whom the building was named.

It was surprising to look at the Science Center and see a beautiful green lawn extending to Anderson Hall. There is a new walkway from the Science Center to Pearsons Hall, but NO Baldwin Hall. It has been razed to make room for the proposed site of the new library. The present library is to be renovated into a student center.

Among the outstanding events of Homecoming Weekend was the Ramsey Lewis Trio. The concert was held on Friday night. The group brought the real sounds of jazz to Maryville. With Lewis at the piano, Cleveland Eaton on the drums and Maurice White on bass, they provided a much more varied program as compared to the records which they have cut.

Friday was a very full day for all as registration of Alumni and Parents took place in the Theatre Colonnade from noon until 5:00 p.m. Informal open house also was being held in the classrooms and dormitories for the Parents to see how the students lived and studied, while the Alumni saw all the changes and compared them with the days when they were part of the student body.

The Pearson Hall dining room was the next stop for the Parents, Alumni and students to pay a visit with Miss Margaret Ware and taste some of her imaginative, delightful dishes for which she is noted.

For the sports minded, there was a Pep Rally around a huge bonfire, after the Ramsey Lewis Trio Concert, on the baseball field for the Scot gridders. It must have boosted the team's morale.

The next day Maryville won over Franklin College, thus whetting the Scots' appetite for victory. They proceeded to win the following Saturday, lose by only one point the next and win the final game of the season, ending up with a record of 3 wins and six losses, the best seasonal record since 1964.

The 1937 Scot football team was hon-



SCOTS OFFENSIVE FOOTBALL LINE gives David Garner, (No 14) quarterback from Maryville, Tenn., plenty of time to throw three touchdown passes in the Scots 28-13 victory over the Franklin (Ind.) College Grizzlies in their first victory in 11 starts and before a big Homecoming crowd.



THE 1968 SCOT FOOTBALL TEAM which won three of its last four games after starting the season with five losses in a row. The MC football future turns towards optimism as only three seniors are on the team and the fighting, aggressive squad returns.



HOWARD J. (MONK) TOMLINSON, Scots Head Football Coach, (third from left) must see those 3 victories as his assistants look on (from left to right) Donald W. Elia, '69; Lauren F. Kardatzke, Tomlinson, R. Michael Dalton, '66; John W. Forgety, '69 and Donald W. Storey, '67.

Sunday Vespers End Homecoming Events

(Continued from Page 10)

oree for the day at the Homecoming game. This team rolled up an impressive 5 wins, 2 losses and 1 tie. Between the opening loss to Chattanooga and the closing loss to East Tennessee State, they rolled over Tusculum, Hiwassee, Milligan, Cumberland, and King and had a scoreless tie with Lenoir Rhyne. During that winning streak, they scored 97 points to their opponents 13.

After the Annual Barbecue, the Honaker Club met in Bartlett Hall to elect new officers. They are: James C. Renfro, '38, president; Jerry D. King, '54, vice-president; Robert M. Navratil, '54, re-elected secretary; Clifford H. "Bo" Henry, '50, treasurer, and James T. Giffin, president-elect, all of Maryville. Members of the board are Dr. Robert D. Proffitt, '51, immediate past-president; James C. Hill, and Conner Banks, '31, all of Maryville, and R. Arnold Kramer, '40, of Knoxville.

The homecoming queen and her court were announced Friday night at the concert and were featured in the Saturday morning parade. They were presented to the public at the Homecoming Game and reigned over the Homecoming Dance on Saturday night.

The Homecoming Parade, one of the big events of Saturday, consisted of the traditional march from the campus through town. Led by the colorful Highland Scots marching band, followed by beautiful co-eds, outstandingly pretty floats, and even "Porky and His Simple Seven" jazz band, the parade helped to create an air of excitement throughout the college community.

The open-house visits in the class rooms proved very interesting especially in Sutton Science Center where a computer programming course is being offered. The Science Department is using the computer to store and compute the grades for the freshman science courses and psychology students are using the computer for statistical studies in their independent study projects. There were demonstrations on some games which had been programmed for play, such as Tic-Tac-Toe and Heads and Tails.

The Homecoming Dance on Saturday Night was a most appropriate ending to a truly eventful day. Johnny Stiefel and "The Chimes" provided the music for the dance.

Sunday night Vespers, led by the Rev. W. Harold Hunter, '49, of the Fourth Presbyterian Church of Knoxville, officially closed the Homecoming Weekend activities.

Alumni Participation In "150 Fund" Increases

As of the end of October, alumni participation in the "150 Fund" has increased, but it is still behind the 1964 campaign. For comparison, the following figures are given:

COMPARISON OF TWO DEVELOPMENT FUND CAMPAIGNS

	1964	1968
Number of Alumni Solicited	5,600	5,870
Number of Alumni Pledges	2,201	636
Amount of Money Pledged	\$173,365	\$117,402
Average Pledge	78.76	184.59
Percent of Participation	39%	11%

It is noted that while alumni participation is down, the amount of the average pledge is up substantially. The box score below shows the ranking of each class. Only one class, 1909, has exceeded the 39% participation figure of 1964, and they barely did with 40%. Only three have exceeded 30%.

Another mailing to all alumni who have not responded was made in November. Alumni are encouraged to help put their class over the top (39%) by making their pledge now. Remember the pledge is for three years and is fully tax deductible.

Class	# In Class	# Pledges	% Part.	Aver.
1893-1905	16	2	13	75.00
1906	14	2	14	57.50
1908	8	2	25	129.00
1909	15	6	40	87.50
1910	10	—	—	—
1911	11	1	9	150.00
1912	15	5	33	120.00
1913	15	4	27	93.75
1914	21	6	29	81.67
1915	17	4	24	168.75
1916	30	8	27	87.50
1917	20	5	25	217.80
1918	26	10	38	1,224.10
1919	27	2	7	770.00
1920	51	9	18	240.28
1921	44	11	25	426.14
1922	48	11	23	80.09
1923	65	8	12	946.88
1924	63	9	14	306.94
1925	79	8	10	249.75
1926	73	8	11	1,103.75
1927	88	15	17	979.67
1928	82	16	20	535.75
1929	105	18	17	895.56
1930	86	9	10	938.33
1931	91	15	16	997.06
1932	103	10	10	175.90
1933	118	13	11	157.92
1934	122	18	15	222.56
1935	127	13	10	145.77
1936	157	14	9	407.14
1937	131	11	8	358.36

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Class	# In Class	# Pledges	% Part.	Aver.
1938	152	13	9	175.23
1939	120	19	16	183.16
1940	155	16	10	164.03
1941	144	17	12	221.18
1942	112	12	11	559.17
1943	158	16	10	149.38
1944	114	10	9	201.50
1945	108	6	6	72.50
1946	122	8	7	105.00
1947	116	12	10	244.38
1948	132	17	13	247.79
1949	151	15	10	119.33
1950	212	22	10	128.07
1951	176	14	8	238.75
1952	163	12	7	161.25
1953	68	11	7	195.00
1954	127	10	8	166.75
1955	116	7	6	77.50
1956	137	17	12	108.24
1957	127	19	15	157.37
1958	134	12	9	75.42
1959	127	13	10	67.08
1960	116	14	12	160.00
1961	133	9	7	67.30
1962	176	5	3	59.14
1963	124	9	7	51.66
1964	113	9	8	55.83
1965	154	11	7	49.77
1966	124	5	4	132.00
1967	148	7	5	56.43

"Golden Scots" Lead Way In Campaign Participation

As in the last campaign, those classes who are members of the "Golden Scots" (fifty years since graduation) lead the way in this campaign. The box figures below show the standings of the top ten classes who have eight or more members still living. The class of 1919 will be taken into the Golden Scots next spring and the class of 1920 will be honored in 1970.

TOP TEN CLASSES IN ALUMNI PARTICIPATION

Class	No. in Class	Pledges	%	Class	No. in Class	Pledges	%
1 1920	53	35	66	1909	15	6	40
2 1906	14	9	64	1918	26	10	38
3 1911	11	7	64	1912	15	5	33
4 1914	21	12	57	1914	21	6	29
5 1916	30	17	57	1913	15	4	27
Class	No. in Class	Pledges	%	Class	No. in Class	Pledges	%
6 1918	26	14	54	1916	30	8	27
7 1917	23	12	53	1908	8	2	25
8 1912	16	8	50	1917	20	5	25
9 1915	21	10	48	1915	17	4	24
10 1919	27	13	48	1920	51	9	18

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MISS VIRGINIA TURNER
118 MILLER AVENUE
MARYVILLE, TENN. 37801

Bulletin of MARYVILLE COLLEGE

Vol. LXVII November, 1968 Number 4

J. Richard Herring, Editor

Published in May, June, August, October, November, December, February, March, and April by Maryville College. Entered May 24, 1904, at Maryville, Tennessee, as second class matter. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized February 10, 1919.